UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,825	03/03/2004	Tean-Sen Jen	LEE.006	1507

20987 7590 05/18/2007
VOLENTINE & WHITT PLLC
ONE FREEDOM SQUARE
11951 FREEDOM DRIVE SUITE 1260
RESTON, VA 20190

EXAMINER	
NGUYEN, JENNIFER T	
ART UNIT	**PAPER NUMBER**
2629	

MAIL DATE	DELIVERY MODE
05/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,825	JEN ET AL.	
	Examiner	Art Unit	
	Jennifer T. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is responsive to amendment filed 2/14/07.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 recites the limitation "the method for dynamically" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4 and 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishitani et al. (Patent No.: US 6,850,214).

Regarding claim 1, Nishitani teaches a method for dynamically modulating driving current applied to a backlight module (i.e., backlight control section 232 to control a backlight of LCD 0121, fig. 15, col. 15, lines 36-38), comprising the steps of:

calculating the brightness distribution of a pixel on a frame (col. 15, lines 43-48);

determining the value of the driving current of the backlight module according to the calculated brightness distribution (col. 15, lines 50-61); and

applying the determined driving current to the backlight module during at least one vertical scanning period (col. 15, lines 50-61).

Regarding claim 2, Nishitani teaches if the brightness distribution is concentrated in high brightness, the value of the driving current is increased so as to raise the luminous intensity of the backlight module (col. 15, lines 36-61).

Regarding claim 3, Nishitani teaches if the brightness distribution is concentrated in low brightness, the value of the driving current is decreased so as to reduce the luminous intensity of the backlight module (col. 15, lines 36-61).

Regarding claim 4, Nishitani teaches the driving current of the backlight module begins to be modulated every one to sixty vertical scanning periods (col. 15, line 62 to col. 16, line 36).

Regarding claim 14, Nishitani teaches a method for dynamically modulating driving current applied to a backlight module, comprising:

calculating the brightness distribution of a pixel on a frame (col. 5, lines 21-35);

designating various gradation ranges to represent corresponding brightness of red, green and blue sub pixels on the frame (col. 6, line 48 to col. 7, line 8, col. 8, line 18-21);

counting the amount of the sub pixels pertaining to each of the gradation ranges to have brightness range indices (col. 8, lines 18-63),

calculating a bright distribution index for the frame according to the brightness range indices (col. 8, lines 18-63);

determining the value of the driving current of the backlight module according to the calculated brightness distribution (col. 15, lines 50-61); and

applying the determined driving current to the backlight module during at least one vertical scanning period (col. 15, lines 50-61).

Regarding claims 15 and 16, Nishitani teaches the brightness range indices can be expressed as a function of the amount of the sub pixels pertaining to each of the gradation ranges with a polynomial of multi-powers terms and the function is dependent on requirements of the backlight module (col. 8, lines 18-63).

Regarding claim 17, Nishitani teaches the driving current of the backlight module is determined by the steps of:

defining maximum and minimum values of the driving current and a plurality of intermediate values between the maximum and minimum values; and

designating the value of each driving current sequentially in accordance with the brightness distribution index (col. 13, lines 17-49).

Regarding claim 18, Nishitani teaches the maximum and minimum values appearing on the driving current are dependent on the characteristics or requirements of the backlight module (col. 13, lines 17-49).

Regarding claim 19, Nishitani teaches a plurality of weighted numbers in accordance with the gradation ranges and the brightness distribution index is expressed as an equation of the brightness ranges indices multiplied by the corresponding weighted numbers (col. 8, lines 1-63).

Regarding claim 20, Nishitani teaches the weighted numbers are not smaller than zero (col. 8, lines 1-63).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishitani et al. (Patent No.: US 6,850,214) in view of Sasaki (Pub. No.: US 2005/0104838).

Regarding claim 5, Nishitani different from claim 5 in that he does not specifically teach the brightness distribution is calculated according to the percentage of the high brightness pixels, and the driving current is adjusted in terms of the percentage.

Sasaki teaches brightness distribution is calculated according to the percentage of the high brightness pixels, and the driving current is adjusted in terms of the percentage [0138-0141]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the brightness distribution is calculated according to the percentage of the high brightness pixels as taught by Sasaki in the system of Nishitani in order to increase the brightness of display and reduce power consumption.

Regarding claim 6, the combination of Park and Sasaki teaches the percentage of the high brightness pixels is about upper of 10 %.

8. Applicant's arguments, see amendment, filed 2/14/07, with respect to the rejection(s) of claim(s) 1-6 under US 6,839,048 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US 6,850,214.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen
5/11/07

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600